DOCUMENT RESUME

ED 220 876 CS 503 895

AUTHOR Burgoon, Judee K.; And Others
TITLE Relational Messages Associated with Nonverbal Behaviors.
PUB DATE May 82
NOTE 40p.; Paper presented at the Annual Meeting of the International Communication Association (Boston, MA, May 2-5, 1982).

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Behavioral Science Research; Behavior Patterns; *Body Language; Communication (Thought Transfer); *Communication Research; Higher Education; *Interpersonal Attraction; *Interpersonal Relationship; *Nonverbal Communication; *Proximity

ABSTRACT

Based on the assumptions that relational messages are multidimensional and that they are largely communicated by nonverbal cues, this experiment manipulated five nonverbal cues--eye contact, proximity, body lean, smiling, and touch--to determine what meanings they convey along four relational message dimensions: emotionality/arousal/composure, intimacy/attraction/trust, detachment, and control. Subjects were 150 students enrolled in a variety of undergraduate communication courses at a large midwestern university. The experiment entailed videotaping a male and female confederate engaged in an ostensive conversation during which they encoded various combinations of the five cues. Subjects then viewed brief, video-only segments from the supposed conversation and rated the relational meanings they thought were being expressed by the confederate they viewed. Each subject viewed two conversational segments, one featuring the male encoding some combination of the cues and one featuring the female, plus a baseline segment displaying both confederates at once. Results indicated that high eye contact, close proximity, forward body lean, and smiling all convey greater intimacy/attraction/trust. Low eye contact, a distal position, backward body lean, and the absence of smiling and touch communicate greater detachment. High eye contact, close proximity, and smiling also communicate less emotionality/arousal and composure, while high eye contact and close proximity alone convey greater control. When the cues are considered relative to one another, proximity emerges as the one carrying the greatest weight. (HOD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

ED220876

Relational Messages Associated with Nonverbal Behaviors

Judee K. Burgoon

David B. Buller

Jerold L. Hale

Mark A. deTurck

Department of Communication
Michigan State University
East Lansing, MI 48824

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

David B. Buller

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

CS503895

Authors' Note

Judee K. Burgoon is associate professor of communication at Michigan State University, East Lansing, MI 48824 where David B. Buller, Mark A. deTurck and Jerold L. Hale are doctoral students in communication.

The authors wish to express their sincere appreciation to Sally Blomstrom, Randy Koper, Yvonne Danjuma, Susan Flynn, Idonas Hughes and Kathy Jenuwine, whose assistance was instrumental in the completion of this study.

Relational Messages Associated with Immediacy Behaviors

One of the more central functions of nonverbal behavior in interpersonal settings is the communication of relational messages.[1] Watzlawick, Beavin and Jackson[2] among others have argued that all communication has both a relational and a content component. The relational component serves to define the nature of the interpersonal relationship between actors, thereby influencing interpretation of the content. Indications of how people feel about each other and their relationship not only provide a framework for interpreting their exchanges but also guide decisions about subsequent conduct within the relationship. While such relational messages may occasionally be communicated through verbal modalities, they are presumed to be conveyed most often through nonverbal channels.[3]

Traditionally, relational communication has been conceptualized as operating along two or three fundamental dimensions. Most research and writing has mentioned an affection or liking element, a control or dominance element, and sometimes an inclusion element.[4] Recently, Burgoon and Hale[5] have taken issue with these views of relational communication as being unnecessarily narrow. Based on a comprehensive survey of such diverse bodies of literature as those on intraspecific displays, human emotional expressions, dimensions of physical environments, communicator credibility, and dimensions of social interaction, they proposed that relational interchanges may have as many as thirteen conceptually distinct facets to them. Many of the facets are interrelated and together offer a richer, more complete understanding of what kinds of messages may be exchanged in the process of defining interpersonal relationships.

Among the more independent dimensions advanced by Burgoon and Hale [6] as part of their relational communication schema are ones related to (1) the amount of submissiveness or dominance and control one person attempts to exert over another, (2) the level of arousal or responsiveness one shows in the presence of another, (3) the degree of formality or informality one introduces into the relationship, (4) the degree of similarity or dissimilarity between parties that is emphasized, (5) the amount of composure and self control one shows in the presence of another, and (6) the degree to which one orients more toward the task at hand or toward the social side of the relationship. The remaining dimensions are all assumed to be more interdependent. They include (7) intimacy, which superordinates the rest, (8) the amount of inclusiveness and receptivity or exclusiveness and nonreceptivity displayed toward another, (9) the apparent depth and breadth or superficiality to the relationship, (10) the degree of trust that is communicated and sought, and (11) the degree of closeness and immediacy that is evident. This last facet of immediacy is in turn comprised of (12) level of affection and attraction that is expressed and (13) amount of involvement and intensity that is conveyed.

To assess whether this multiplicity of messages is actually used by people in their dyadic interchanges, Burgoon and Hale [7] also conducted two studies in which people rated a partner on a series of Likert-type statements designed to represent the full gamut of proposed messages. Results of factor analyses revealed that the messages people used in a discriminating manner formed four clusters. The first, labeled <u>emotionality/arousal/composure</u>, included messages of formality, composure, relaxation and comfort, as well as indications of negative affect such as anger,

frustration and hostility. The second cluster, labeled intimacy/attraction/trust, included a host of messages related to expressions of attraction, liking, caring if one was liked in return, attempts to earn trust and establish rapport, efforts to make the conversation seem intimate and indications of a desire for further communication. The third cluster, labeled detachment, largely included messages communicating distance, aloofness, boredom, coldness, and superficiality but also at the other end of the spectrum, intense involvement. It therefore captured the proposed dimensions of immediacy, inclusion-exclusion, and to some extent, depth/breadth. The final cluster, control, included messages of dominance, submission, ingratiation, competitiveness and attempts to persuade.

These results made clear that relational communication is indeed richly complex in the variety of messages that can be exchanged. At the same time, they raised a critical question: If people are routinely sending and interpreting messages along these multiple facets, what verbal and nonverbal behaviors are conveying the meanings? The present experiment was therefore undertaken to begin to address the role that nonverbal cues play. Specifically, we wished to explore (1) what cues are associated with a particular message, (2) what multiple meanings are associated with a particular cue, and (3) how combinations of cues produce variation in meaning.

In pursuing which nonverbal behaviors might have relational significance, we were guided by Burgoon's "message orientation" toward nonverbal communication. That is, we centered on "those acts and attributes which are used with regularity within purposive interchanges and appear to have

socially shared meaning...."[8] Practicality demanded that we confine our initial efforts to a manageable number of cues. Because of their presumed centrality to relational communication, the set of behaviors that presented itself as a logical starting point was that which has been labeled "immediacy behaviors." As conceptualized by Mehrabian and others,[9] these are behaviors that function to increase or decrease the physical and psychological distance between people by signalling approach and avoidance tendencies. Immediacy entails a sense of both spatial and temporal closeness; its opposite, nonimmediacy, implies a distancing in space or time or both. Immediacy cues therefore express the degree of involvement and sensory stimulation present in the encounter. At the same time, they also convey positive and negative evaluations: As Mehrabian's fundamental principle states, "People are drawn toward persons they like, evaluate highly and prefer and they avoid or move away from things they dislike, evaluate negatively or do not prefer."[10]

In the nonverbal arena, cues that have been associated with immediacy include physical proximity, eye contact, smiling, body lean, shoulder and body orientation, head nods, symmetry of limbs, arm and leg movement, gesticulations, self-manipulations, touch, speech rate and duration.[11] Many of these cues have been examined in the context of theories of affiliative conflict and compensation.[12] The research literature has shown that many of these cues operate as a system, with one cue adjusting for the effects of another in the process of creating interpersonal perceptions of affiliation and involvement. Three cues that have been studied most extensively are proximity, eye contact and body lean. Two others that

would seem to be closely related in conveying messages of intimacy and attraction are touch and smiling. Little is known, however, about how these two cues operate in conjunction with the others. Moreover, little is known about what other meanings these five cues might communicate simultaneously that are of import to other facets of relational communication. Inasmuch as many nonverbal cues are known to have a multiplicity of meanings, it is likely that these so-called immediacy cues, which are omnipresent in interpersonal exchanges, carry other interpretations above and beyond mere closeness and affiliation. At the same time, the meaning associated with any particular cue may be altered due to the combination of other nonverbal cues accompanying it. A primary purpose of this investigation therefore was to examine these cues in the midst of other, presumably related cues. Looking at several cues simultaneously permitted us to assess not only which cues express the same meanings and how many meanings are possible but also how those meanings vary as a result of the context of cues in which they are presented.

In reducing the total possible set of cues to a number that could be controlled by a communicator and that could be reasonable analyzed, we focused on those that seemed to have the most promise, based on previous research and speculation, for conveying multiple relational messages. The five we selected, proximity, eye contact, body lean, touch and smiling, are reviewed below.

Hypotheses

Eye contact. One of the most commonly cited bearers of relational content, eye contact is strongly linked to intimacy, affiliation and liking. For example, friends engage in more mutual gaze than do strangers,[13] more gaze

occurs with liked than disliked others,[14] and greater eye contact fits with a cluster of nonverbal behaviors that together have been defined as an affiliation factor.[15] Moreover, increased looking has been associated with more friendliness and more favorable socio-emotional evaluations by recipients.[16] The research thus clearly indicates that increased frequency and duration of eye contact accompany intimate relationships and induce positive regard. However, it is less definitive on whether affiliative meanings are actually attributed to the behavior. Hence the need to empirically test whether gaze is seen as carrying intimacy, attraction and trust messages.

Regarding emotionality, arousal and composure messages, the linkage with eye contact is more tenuous. Studies have indicated that eye contact induces activation and that aroused individuals tend to exhibit increased eye contact.[17] Direct evidence that eye contact is used to communicate an emotionally charged state is lacking, but the inference to be drawn is that increases in eye contact should signal greater emotional reactivity.

Relative to detachment, the avoidance of eye contact has been hypothesized to signal disinterest and the presence of eye contact, a desire for involvement.[18] Indeed, the body of literature on immediacy consistently cites lack of eye contact as a primary message of nonimmediacy and psychological distance.[19] Tangentially related evidence from married couples also shows that those who have the most disagreements display the least amount of eye contact and other cues of "closeness."[20] Almost by definition, then, reductions in eye contact should convey less involvement, greater distance and greater superficiality.

Finally, the relationship between eye contact and control messages is relatively well-established, both in terms of encoding and decoding. Communicators direct the least amount of eye contact to low status others[21]. Com- longer looks and fewer breaks in eye contact are interpreted as indicative of dominance, persuasiveness and aggressiveness.[22] Eye contact is in fact one means of defining dominance hierarchies.[23]

Based on the preceding literature, the following hypothesis was framed:

Hypothesis 1: In a dyad, greater amounts of eye contact communicate messages of
a) greater intimacy, attraction, and trust,
b) greater emotionality, arousal, and noncomposure,
c) lesser detachment, and
d) greater control.

Proximity. Like eye contact, increased proximity has been empirically and theoretically associated with affiliation, attraction and liking.[24] People adopt closer distances to those they like and increase distances from those who give them negative evaluations.[25] Proximity is also one of the key elements in Mehrabian's intimacy factor of social behavior.[26] Physical closeness should therefore clearly express greater attraction, liking and desire for trust. In the same vein, proximity has been strongly connected to involvement and interest, with greater distance attributed to indicate greater detachment and disinterest.[27] One investigation that looked at the meaning associated with distance found that observers judged a far distance as cold and unresponsive.[28] Greater distances should therefore be seen as expressing less involvement, less warmth and less desire for depth in the relationship.

As for emotionality, arousal and composure messages, research evidence is scanty. Patterson and Sechrest[29] found confederates were judged as least extraverted and socially active at a far distance and most active at a near distance. Patterson[30] subsequently argued that close proximity is a highly arousing communication situation. Common experience also testifies to people adopting closer distances when expressing negative emotional states such as anger and hostility. On this basis, we predicted that increased proximity may signal emotional arousal.

Hypothesis 2: In a dyad, closer proximity communicates messages of
a) greater intimacy, attraction and trust,
b) greater emotionality, arousal, and noncomposure, and
c) lesser detachment.

The relationship between proximity and control messages was not hypothesized due to conflicting findings in the literature. On the one hand, experiments have shown that communicators who adopt close rather than far distances are perceived as more persuasive and dominant.[31] They also actually obtain more persuasion at close distances under circumstances where they are of higher status or attractive.[32] On the other hand, if status can be considered a first cousin to dominance, then the literature depicts an opposite relationship. Higher status individuals demand and receive greater personal space than those of lesser status.[33] Henley[34] suggests that the smaller distances accorded women in the American culture are an example of this--they correspond to the lower status of women. Stacks and Burgoon[35] have also invoked a status explanation for Albert and Dabbs'[36] finding of reduced persuasion at a moderately close distance--they suggest that the lower status conveyed by the proximate speaking position undermined acceptance of the persuasive message. Because of these conflicting possibilities, a research question was posed:

Question 1: What is the role of proximity in the communication of control?

Body lean. A third nonverbal cue with relational message potential is body lean. Though the research examining its connotations is limited, it suggests that upright or forward body leans are cues of intimacy, emotionality and involvement, while backward body leans are cues of non-attraction, relaxation and detachment. People who like each other and good friends exhibit forward body lean.[37] Forward lean or an upright position also typically conveys greater tension, excitement, and when coupled with close proximity, emotional responsiveness, while backward lean or reclining forms part of a relaxation factor and as such, communicates more negative attitudes (compared to a less relaxed posture).[38] Reclining also corresponds with increased distance as part of a nonimmediacy factor and is perceived as expressing boredom and passivity.[39] Based on these findings, the following hypothesis was advanced:

Hypothesis 3: In a dyad, forward body lean communicates messages of
a) high intimacy, attraction and trust,
b) high emotionality, arousal and noncomposure, and
c) high involvement, warmth and depth (i.e., low detachment);
backward body lean communicates the opposite of each.

The meaning of body leans relative to relational control was not hypothesized. As noted previously, one component of the control dimension is persuasiveness. Mehrabian and Williams[40] found that smaller reclining angles were used by those attempting to be persuasive but that larger reclining angles (i.e., greater backward lean) formed part of a factor that included greater dominance (as measured by a personality instrument) and greater self-perceived persuasiveness. By contrast, Henley[41] has asserted that "dominant persons can assert their authority by leaning

towards the other to express negative opinion; subordinate persons had better lean forward only in ingratiating circumstances...." Since the assertion of authority and the performance of ingratiating behavior are both part of the control dimension, this essentially says that forward lean is an effective means of expressing relational control. Because of the conflicting findings, we posed another research question:

> Question 2: What is the role of body lean in the communication of control?

Smiling. Yet another potential indicator of relational messages, smiling (or facial pleasantness) occurs more frequently within affiliative relationships and appears to carry messages of positive regard. People direct more smiling toward friends than strangers and when seeking approval, an affiliative action;[42] facial pleasantness is one of the cues forming an affiliation factor of nonverbal behaviors;[43] and greater facial pleasantness is correlated with increases in rated friendliness.[44] At the same time, increases in facial pleasantness correlate positively with calmness and inversely with arousal,[45] which suggests that increased smiling should carry messages of less emotionality and greater relaxation and composure.

Regarding detachment, other than the frequent inclusion of smiling in lists of immediacy cues,[46] direct evidence that smiling or the absence of it conveys messages of involvement, interest and depth is lacking. However, it seems reasonable to expect it to operate in a parallel fashion to other immediacy cues, which would mean that the absence of smiling expresses greater detachment. As for control, the few relevant research findings have produced mixed results. Although Mehrabian and Williams[47] predicted that greater facial pleasantness would accompany increased persuasive intent and increased

persuasiveness, only one of their experiments found facial pleasantness to load positively on a perceived persuasiveness factor; in a second experiment, less facial pleasantness correlated with greater dominance and showed no relationship to persuasion. The latter pattern of less facial pleasantness corresponding to greater control was further confirmed in an experiment by Romano and Bellack,[48] which showed reductions in smiling to earn higher ratings of social skill in assertiveness. We therefore tentatively expected a more stern visage to communicate greater dominance and control than a smiling face, which might convey a more submissive, approval-seeking posture.

Hypothesis 4: In a dyad, the presence of smiling communicates messages of
a) high intimacy, attraction and trust,
b) low emotional arousal, high composure and high relaxation,
c) high involvement and interest (i.e., low detachment), and
d) low control;
the absence of smiles communicates the opposite.

Touch. Though the research examining touch is not as extensive as that dealing with the four previous nonverbal cues, the findings consistently indicate that touch is a powerful cue of intimacy, involvement and control. The use of touch engenders more liking from recipients[49] and more positive evaluations by observers.[50] It occurs more often in affiliative situations and is expected in affiliative relationships.[51] Harmonious married couples also tend to display more other-touch, while discordant couples show greater self-touch than other-touch.[52] The latter pattern suggests that the absence of touch corresponds to greater distance and disengagement from a relationship. As for relational control messages, dominant individuals engage in more touch than do submissive individuals; people also expect persons of higher status to initiate touch, while they expect subordinates to refrain from it.[53]

These findings guided the final hypothesis:

Hypothesis 5: In a dyad, touching one's partner communicates messages of
a) high intimacy, attraction and trust,
b) high involvement, interest and depth (i.e., less detachment), and
c) high control;
the absence of touch communicates the opposite of each.

The role of touch as a message of emotionality/arousal/composure was not hyptohesized because of the absence of any relevant research. Boderman, Freed and Kinnucan[54] found that people who engaged in touch were seen as more responsive, which might conceivably translate into being more aroused. On the other hand, the positive connotations associated with touch might cause people to equate it with the calm, relaxed end of the emotionality continuum rather than the aroused end, which includes negative emotional states. Consequently, we posed another research question:

Question 3: What is the role of touch in the communication of emotionality/arousal/compusure?

Patterns of behavior. Beyond the meanings associated with these five cues individually, an issue that requires attention is the effect of these cues operating in concert. The nonverbal communication system consists of many channels transmitting information simultaneously. In natural communication transactions, cues in one channel may emphasize, contradict or modify interpretations of cues in other channels. That these concurrent cues need to be considered in combination is evident in a number of investigations. For example, Ellsworth and Langer's[55] study of staring supported their contention that eye contact is an activating cue whose specific meaning depends on and is modified by context, which includes other nonverbal cues. The abundant literature on equilibrium and affiliative conflict theories[56] has amply demonstrated the trade-offs that can and do occur among immediacy cues; the resultant patterns of complementation and compensation would be obscured by considering cues in isolation. Similarly, a series of studies by Andersen and others[57] on the gestalt

impact of multiple immediacy cues suggest that their combinatory power may differ from that attributed to individual cues. Finally, Romano and Bellack's[58] multiple regression analyses of nonverbal predictors of social skill in assertiveness serves as an excellent example of what can be learned about the relative contributions of various nonverbal cues when they are studied as a system.

Thus, the results from an examination of individual cues must be interpreted in light of the patterns of cues within which they occur. The key questions, then, are whether certain combinations of cues may alter the meanings of others, perhaps through intensification or deintensification, and whether certain subsets of cues are most responsible for the transmission of a particular relational message. These issues were addressed in two research questions:

> Question 4: Do different combinations of eye contact, proximity, body lean, smiling and touch alter the relational messages communicated by these cues individually?
>
> Question 5: Which combinations of eye contact, proximity, body lean, smiling and touch contribute the most meaning to particular relational messages?

Gender differences. A final, subsidiary interest in this investigation was the possible replication of the numerous sex differences found in literature on nonverbal and relational communication. Women have generally been shown to be more affiliative, immediate and intimate than males.[59] Normative data have also shown women to adopt closer conversational distances, to engage in more eye contact and to smile more often.[60] Women also use different cues than men for conveying certain relational messages. For instance, women are more likely to use eye contact to signal dominance, while men are more likely to communicate it through proximity and rate of approach.[61] Women are also more likely to be judged as persuasive if they use nearly constant eye contact at a far distance, while males earn higher persuasiveness ratings using moderate rather than nearly constant eye contact.[62] These various gender differences in how nonverbal cues are used or interpreted suggest that there may be noticeable differences in interpretations of nonverbal relational messages encoded by females as compared to males. The

final research question probed this possibility:

> Question 6: What is the effect of sex of communicator on the interpretation of relational messages communicated via contact, proximity, body lean, smiling and touch?

Method

In overview, the experiment entailed videotaping a male and female confederate engaged in an ostensive conversation during which they encoded various combinations of the five cues under study. Subjects then viewed brief, video-only segments from the supposed conversation and rated the relational meaning they thought were being expressed by the confederate they viewed.

While a total of 25 cues combinations might have been possible, some were in reality impossible to produce--such as adopting a far distance and touching, while others were considered highly improbable--such as groping to touch someone while avoiding eye contact. Consequently, only 20 cue combinations were produced. Each confederate encoded all the possible cue combinations. Each subject viewed two conversational segments, one featuring the male encoding some combination of cues and one featuring the female, plus a baseline segment displaying both confederates at once.

Sample

Subjects were 150 students enrolled in a variety of undergraduate communication courses at a large midwestern university. Participating was voluntary but earned class credit.

Independent Variables

Due to the large number of cues being manipulated, each was limited to two levels. For proximity, the close condition consisted of moving 18 inches closer to the other interactant than the baseline distance (for a conversational distance of 30 inches). The far condition consisted of moving 18 inches further away (for a conversational distance of 66 inches). These distance manipulations have worked effectively elsewhere in inducing different interpersonal perceptions.[63]

For eye contact, the high condition involved maintaining nearly constant eye contact, with only a few glances away from the other interactant. The low condition consisted of almost no gazing toward the other. Smiling was either present, with

the confederate smiling as much as possible during the segment, or absent.

Body lean was manipulated by using chairs that could pivot forward or backward. In the backward lean condition, the confederate reclined completely in the chair, producing an angle of approximately 120^{o}. In the forward lean condition, the confederate leaned as far forward as was comfortable, producing an angle of about 60^{o}. The confederates rested their forearms on their laps.

Touch was also dichotomized as present or absent. When touch was enacted, the confederate briefly touched the upper arm of the other interactant two or three times during the segment. If the confederate was in a backward lean condition and needed to engage in touch, he or she would lean forward only to touch the other person then return to the reclining posture. Because touch was not physically possible in the far condition and would have appeared unnatural in the low eye contact conditions, it was only manipulated in the close proximity, high eye contact conditions. All other cues were manipulated in all possible combinations, yielding a total of 20 cue combinations.

Stimulus Tape

Prior to videotaping, the two confederates rehearsed manipulating degrees of the five cues under study while holding all other nonverbal cues constant. Because subjects were only to see the video portion of the interchanges, verbal and paralinguistic cues were permitted to vary, with confederates creating whatever dialogue they wished. Only after both confederates had successfully encoded the assigned cue set to the satisfaction of trained observers was a given segment videotaped.

Forty 30-second segments were filmed, 20 focusing on the male as the stimulus to be rated and 20 focusing on the female as the stimulus. In each case, the stimulus confederate was filmed over the right shoulder of the non-stimulus confederate. This camera angle yielded a three-quarters frontal view of the stimulus confederate and the upper back of the non-stimulus confederate and was designed to maximize the view of the person to be rated while eliminating any interference

from nonverbal behaviors by the other interactant.

To provide subjects a baseline sample of the confederates' normal communication behavior, control segments were also taped. To achieve natural representations of behavior, the confederates were initially instructed to take seats in two facing chairs and to make themselves comfortable while discussing whatever they chose. When they indicated that they were comfortable, the distance between the center posts of the two chairs was recorded as the baseline for proximity. (It was 48 inches.) The confederates then continued to converse while the control segments were filmed using a perpendicular camera angle that produced a complete profile of each. Both confederates were visible in the control segments.

Tapes of the baseline interactions were also used to train confederates in controlling idiosyncratic and extraneous nonverbal cues.

For efficiency in presenting the conversational segments to subjects, the 40 segments were randomly assigned to one of five tape sequences, each of which was preceded by a control segment. Subjects who reported to an experimental session were divided into four groups. Each group saw the control segment and two of the manipulated segments. Segments were arranged so that each subject viewed both a male and female stimulus confederate.

As a check on the success of the cue manipulations, 54 students (many from a graduate course in nonverbal communication) watched the tapes and recorded whether each of the five nonverbal cues was present or absent in each segment. The percentage of correct identification was as follows: 93% for proximity, 94% for eye contact, 94% for body lean, 92% for smiling and 97% for touching. These results indicated not only that the cues were successfully manipulated and readily discernible but also that the presence of certain cues did not distort perceptions of the presence or absence of other cues. (For example, forward body lean and smiling did not lead to the perception of high eye contact when the condition was actually low eye contact.)

Experimental Procedure

Subjects signed up for one of the five experimental sessions (corresponding to one of the tape sequences). At the testing site, subjects were randomly assigned to one of the four groups and seated together. After packets containing some bogus questions and the dependent measures were distributed, subjects were told they would be viewing two video-only excerpts from an ongoing conversation and that they were to evaluate the kinds of nonverbal messages they thought were communicated during that portion of the conversation. To acquaint them with the participants in the conversation, they were first shown the control segment. The mobile monitor on which the tape was shown was then wheeled from group to group. After viewing one segment, the group would then complete the relational communication measure. While waiting for the first or next viewing, subjects also completed a series of demographic questions designed to keep them occupied. Visibility of the monitor was restricted so that only the group rating a particular segment could see it. Each subject rated two segments.

Dependent Measures

Subjects' perception of the emotionality/arousal/composure, intimacy/attraction/trust, detachment and control messages being communicated were assessed with 20 seven-interval Likert-type statements with a range from strongly agree to strongly disagree. Each of the four dimensions was represented by five items taken from Burgoon and Hale's factor analytic study of relational messages.[64] The scales produced the following coefficient alpha reliabilities: .76 for emotionality/arousal/composure, .86 for intimacy/attraction/trust, .79 for detachment and .60 for control.

Results

Because touch was not completely crossed with all other variables, hypotheses were tested through two separate analyses of variance for each dependent measure.

One was a five-way anova crossing proximity, eye contact, smiling, body lean and confederate gender. The other was a four-way anova crossing touch, body lean, smiling and confederate gender. Because the latter was performed only on cells with close proximity and high eye contact, it included fewer subjects and therefore has fewer degrees of freedom in the denominator for the F-ratios. Scheffé's tests[65] were used as the multiple comparison procedure for probing interaction effects. Supplementary multiple regression analyses supplied the rank order of influence among variables.

Hypothesis One

The hypothesized relational meanings associated with eye contact were largely confirmed. Significant main effects obtained for intimacy/attraction/trust (F = 29.76, df = 1, 266, p <.001), detachment (F = 39.68, df = 1, 266, p <.001), control (F = 12.13, df = 1, 266, p <.001) and emotionality/arousal/composure (F = 24.47, df = 1, 266, p <.001). As predicted, increases in eye contact communicated greater intimacy and affiliation, lesser detachment and greater dominance and control. However, contrary to the hypothesis, greater eye contact was also associated with greater relaxation and nonarousal.

Hypothesis Two and Question One

The hypothesized meanings for proximity were partially confirmed. Main effects for intimacy/attraction/trust (F = 179.33, df = 1, 266, p <.001), emotionality/arousal/composure (F = 45.81, df = 1, 266, p <.001) and detachment (F = 107.21, df = 1, 266, p <.001) revealed that closeness communicates greater intimacy and greater involvement (i.e., lesser detachment), as predicted, but also greater composure and less emotional arousal, contrary to predictions. Results on the research question of the relationship of proximity to control showed that closer proximity conveys greater relational dominance (F = 72.48, df = 1, 266, p <.001).

Hypothesis Three and Question Two

The hypothesized meanings of body lean were largely supported. Forward body lean expressed greater affiliation and caring ($F = 6.61$, $df = 1, 266$, $p < .01$) and less coldness and superficiality ($F = 11.78$, $df = 1, 266$, $p < .001$). There was also a trend ($F = 3.57$, $df = 1, 266$, $p = .06$) toward forward body lean conveying increased emotionality and activation compared to backward body lean. The relationship between body lean and relational control posed in the research question was statistically nonsignificant.

Hypothesis Four

The hypothesized meanings of smiles were confirmed for three of the four relational message clusters. Frequent smiling was interpreted as expressing greater intimacy, attraction and trust ($F = 25.48$, $df = 1, 266$, $p < .001$), greater relaxation, composure and nonemotionality ($F = 59.71$, $df = 1, 266$, $p < .001$) and greater involvement and warmth (i.e., less detachment) ($F = 76.84$, $df = 1, 266$, $p < .001$). The relationship between smiles and control was not significant.

Hypothesis Five and Question Three

The presence or absence of touching significantly influenced relational interpretations for two of the three hypothesized message clusters. The presence of touch communicated greater affiliation and intimacy ($F = 7.35$, $df = 1, 103$, $p < .01$) and lesser distance and aloofness ($F = 3.92$, $df = 1, 103$, $p < .05$). Touch was not related to relational control, as had been hypothesized, nor to emotionality/arousal/composure, as per the research question.

Question Four

Significant main effects were found for communicator sex on both detachment ($F = 4.66$, $df = 1, 266$, $p < .05$) and control ($F = 5.92$, $df = 1, 103$. $p < .05$). The male confederate was judged as communicating more detachment and control. Only a trend was found for intimacy/attraction/trust ($F = 2.91$, $df = 1, 266$, $p = .09$), with the female being judged as slightly more intimate. No sex differences occurred

on the emotionality variable.

Question Five

The last research question addressed the effects of combinations of nonverbal cues on the communication of relational messages. The interaction effects have a direct bearing on this question. For each of interpretation, each dependent variable will be discussed separately.

Effects of cue combinations on emotional/arousal/composure. Significant interaction effects appeared in both the analysis including touch and the analysis excluding touch and involved all five nonverbal cues. However, none of the patterns overrode the main effects and the multiple comparison tests, which are highly conservative, failed to detect any combinations of cues that were more or less indicative of emotionality and arousal than any other.

For the analysis excluding touch (the five-way anova), the η^2 was .34; for the analysis including touch (the four-way anova), the η^2 was .18. The relatively large amount of variance accounted for, particularly in the analysis including variations among four cues, revealed that such cues account for appreciable variability in the interpretation of emotionality/arousal/composure. The multiple regression analyses, which included only main effects, produced the following standardized equations:

emotionality = -.386 smiling - .256 proximity - .218 eye contact - .073 confederate gender + .021 body lean (for the analysis excluding touch)

emotionality = - .379 smiling + .148 body lean - .130 touch - .081 confederate gender (for the analysis including touch)

Effects of cue combinations on intimacy/attraction/trust. Two-way and four-way interactions involving every nonverbal cue occurred but again did not override the patterns established by the main effects. Among combinations of cues taken two at a time, backward body lean coupled with no smiling communicated the least affiliation, attraction and trust. Regardless of whether eye contact was high or

low when coupled with proximity, a close distance always communicated greater intimacy than the far distance. In other words, high eye contact didn't compensate for the lesser intimacy communicated by a far distance. However, the combination of high eye contact and close proximity was significantly more intimate than low eye contact and close proximity.

For combinations of cues taken three at a time, cell comparisons indicated that distance communicated less intimacy, attraction and trust than did closeness no matter what degree of eye contact and body lean accompanied it and regardless of confederate gender. The amount of eye contact did, however, make a greater difference in intimacy interpretations in the proximate than the distal condition. A combination of far distance and no smiling also communicated low affiliation regardless of the amount of eye contact or confederate gender. Finally, smiling communicated more intimacy than the absence of smiling, regardless of body lean, proximity or sex of communicator. In other words, increasing or decreasing the intimacy communicated through body lean and distance did not alter the meaning expressed by the presence or absence of smiling when all three cues were considered at once.

Overall, the multiple comparisons indicated that proximity was the single biggest determinant of interpretations of intimacy/attraction/trust. This conclusion was also borne out by the regression equations, which showed proximity to carry the greatest weight, followed by touch and smiling, which were about equal in their contributions. The standardized regression equations were as follows:

intimacy = .520 proximity + .241 smiling + .173 eye contact + .121 body lean + .093 confederate gender (analysis excluding touch)

intimacy = .236 touch + .228 smiling + .051 body lean + .047 confederate gender (analysis including touch)

Variance accounted for by the combination of cues was again high: the η^2 for the analysis excluding touch was .50, for the analysis including touch, .11.

Effects of cue combinations on detachment. Significant two-, three- and four-way interactions involving all cues were found. As with the previously discussed dependent measures, no interaction effects were disordinal. Among combinations of cues taken two at a time, the following patterns emerged. High eye contact with close proximity communicated greater involvement and warmth than either high eye contact with a far distance or low eye contact with a close distance. High eye contact also reduced perceived detachment moreso in the close than in the far distance. Backward lean combined with the absence of smiling was also significantly more communicative of coldness and uninvolvement than either of those cues alone. As for sex differences, the male confederate was seen as particularly detached when encoding backward body lean and no smiling. Overall, these results demonstrated that combinations of two cues carried stronger detachment messages than cues taken singly.

When cues were considered three at a time, the following results appeared. When the cues were proximity, eye contact and smiling, the addition of a third cue did not strengthen the detachment meaning beyond that communicated by two cues. When the cues were proximity, eye contact and body lean, the greatest detachment was expressed via low proximity and either low eye contact or backward lean. Within the cue combinations, proximity consistently was the one cue most responsible for communicating levels of detachment. (However, for the male confederate, increasing proximity did not successfully overcome the lesser immediacy communicated by the combination of low eye contact and no smiling.) High eye contact also contributed greatly to perceptions of greater involvement and interest. When high eye contact was coupled with close proximity, the normally negative meaning associated with backward lean was insufficient to reduce the effect of the other two cues. Finally, when touch was considered, the combination of no touch, absence of smiling and backward lean significantly intensified the communication of detachment compared to

other cue combinations.

The η^2 values were .47 for the analysis of the four cues excluding touch and .19 for the three-cue combination that included touch. The regression equations were as follows:

detachment = - .407 proximity - .407 smiling - .233 eye contact - .156 body lean - .088 confederate gender (analysis excluding touch)

detachment = - .400 smiling - .160 touch - .102 confederate gender - .053 body lean (analysis including touch)

These combined results reveal that the addition of proxemic and eye contact variations substantially increased the interpretability of detachment messages, as one might expect, and that smiling is also a significant contributor to such messages.

Effects of cue combinations on control. Significant two- and four-way interactions were found involving proximity, eye contact, body lean and confederate sex. Across the combinations of immediacy cues, proximity again proved to be the most important determinant of relational control. Close proximity was viewed as communicating more dominance and persuasiveness. The male confederate appeared in the conditions seen as the least and most controlling, while the female was seen as more moderate.

While the η^2 values for both analyses were smaller, .25 for the four-cue analysis and .06 for the three-cue analysis, a large portion of variance was still accounted for in the conditions in which proximity and eye contact were permitted to vary. The standardized regression equation for that analysis was as follows:

control = .437 proximity + .179 eye contact + .105 body lean - .003 confederate gender + .002 smiling

(The other regression analysis failed to produce a significant F overall.)

The weights again signal the relative preeminance of proximity in conferring dominance and persuasiveness meanings, with eye contact and body lean playing lesser roles.

The mean ratings for all cue combinations on each dependent measure appear

in Table 1.

Discussion

This experiment largely confirmed the hypothesized relationships between five nonverbal cues and four clusters of relational messages. Greater amounts of eye contact convey greater degrees of intimacy, attraction and trust; less detachment, distance and coldness; and greater relational control, aggressiveness and competitiveness. Close proximity (as compared to far distancing) expresses the same messages. Forward body lean (as compared to backward lean), the presence of smiling and the presence of brief touching also communicate greater affiliation, attraction and desire for trust; lesser distance, superficiality and boredom (i.e., less detachment); and greater composure and nonemotionality. Unexpectedly, lesser arousal also appears to be associated with more frequent eye contact and closer proximity.

When the cues are considered relative to one another, proximity emerges as the one carrying the greatest weight. For all but the emotionality/arousal/composure cluster, it accounted for the most variance in meaning, and alterations in other cues typically failed to change the meaning expressed by a close or far conversational distance. Second in importance appears to be smiling, which was the single most meaningful indicator of emotionality/arousal/composure and a large contributor to intimacy/attraction/trust and detachment meanings. Third in rank is eye contact, as evidenced by its role in intensifying or deintensifying interpretations in the interaction analyses and by the reduction in variance accounted for when eye contact and proximity were taken out of the analysis (i.e., the analyses exploring the role of touch). Of the remaining cues, touch plays an important role in communicating intimacy/attraction/trust and body lean plays a lesser role on all four relational dimensions.

As for the alterations in meanings due to combinations of cues, the results show the cues to be relatively additive: The addition of a second cue that conveys the same meaning as a first (e.g., both expressing intimacy) usually strengthens the particular meaning. However, the addition of a third congruent cue typically supplies little additional reinforcement. By the same token, a third cue that is incongruent with the first two is usually insufficient to overcome the meaning associated with the first two. The exception is proximity, which alone can alter the interpretation significantly. Otherwise, it takes two and sometimes three cues communicating nonimmediacy to counteract the meaning conveyed by two cues expressing immediacy.

Although most of the results were in line with predictions, the contrary findings for eye contact and proximity in communicating emotionality/arousal/composure deserve comment. In our initial reasoning, we had focused on the high end of the emotionality continuum, arguing that closer proximity and frequent eye contact would signal greater activation. However, we failed to consider adequately the positive connotations of these behaviors and their l[illegible] association with the opposite end of the continuum, namely that which involv[illegible] greater relaxation and more pleasant emotional states. In retrospect, it seems plausible that a curvilinear relationship might pertain, with highly proximate and highly distal distances both signalling low levels of arousal and emotionality and intermediate distances conveying greater activation and lack of composure. The same could also be predicted for eye contact. Because the number of cues manipulated in this experiment was large, it was unfortunately not possible to consider three levels of each cue, but it would be advisable to do so in future investigations.

There were also four instances of nonverbal cues having no significant

relationship to particular relational messages. Neither body lean, smiling nor touch affected control interpretations; touch also failed to relate to emotionality judgments. It is possible that these cues only relate to some relational messages and that they play a more subordinate role in communicating other relational states. However, in the case of body lean, it did interact with other cues to modify control connotations, suggesting that it may play an auxiliary if not a primary role. As for smiling and touch, it is possible that the experimental manipulations used here reduced their ability to influence meanings. A review of the videotapes along with confederate comments indicated that the touch manipulation may have appeared somewhat artificial, while the smiling behavior may have been less readily apparent than other cues due to the distance between the confederate's faces and the camera. It therefore seems premature to draw any conclusions about the efficacy of body lean, smiling and touch in conferring control meanings or of touch in expressing emotionality meanings. It is possible that further experimentation will reveal that they supply an important, albeit subtle, refinement of meaning.

Also worth noting is the relatively small number of sex differences that were found. The male confederate was judged as somewhat more detached and controlling. Although confederate gender did interact with cue combinations, few discernible patterns emerged. Again, more research is needed before definitive conclusions can be drawn. The present experiment is an improvement over nonverbal studies that use confederates of only one gender, but the use of only one male and one female confederate makes any generalizations about sex effects unwise at this time.

Overall, the results of this experiment address an important issue in nonverbal communication--whether nonverbal behaviors actually operate as messages. The findings presented here provide strong confirmation for our contention that there is indeed social consensus on the meanings of various cues, enabling us to regard

them as message bearers in the same fashion as verbal acts are regarded. In other words, they may be considered part of a socially shared coding system. Were there no consensus, significant effects could not have emerged. That the cues maintained their various meanings despite changes among accompanying cues also speaks to their relatively consistent, recognizable meaning.

At the same time, the pairing of incompatible cues with one another was effective in neutralizing meaning, indicating that the context in which cues are embedded is significant in influencing interpretations. The ultimate meaning to be derived from a set of nonverbal cues depends not only on their separate meanings but their congruence with one another, with some cues carrying more weight than others. The important implication for nonverbal communication research is that studying one or two cues in isolation may be very misleading, as other cues present may serve to compensate or augment the meanings being attributed to the ones under study. The result can be false conclusions about what interpretations are being assigned to the cue complex or even about which cues are actually responsible for any observed effects.

Finally, the present results also affirm the significance of nonverbal cues in expressing relational messages. The five cues under study effectively conveyed meanings related to all four relational message clusters. That the cues in combination accounted for so much variance in the interpretations among the relational dimensions underscores the power of these readily available cues in shaping interpersonal perceptions.

Table 1

Mean Ratings on Four Dimensions of Relational Messages, by Condition

INDEPENDENT VARIABLE CONDITIONS[1]					DEPENDENT VARIABLES			
Proximity	Eye Contact	Smile	Lean	Touch	Intimacy	Immediacy	Emotionality	Control
L	H	P	F	A	20.15	23.22	26.67	18.60
L	H	A	F	A	18.14	20.22	22.84	21.28
L	H	A	B	A	13.58	16.11	18.30	13.58
L	H	P	B	A	17.92	22.50	28.75	16.17
L	L	P	F	A	18.88	23.26	20.33	17.31
L	L	P	B	A	17.95	20.03	25.63	17.22
L	L	A	B	A	11.44	12.62	18.46	14.06
L	L	A	F	A	17.11	20.12	21.31	14.68
H	H	P	F	A	30.28	30.70	26.24	23.05
H	H	P	B	P	28.76	30.52	31.98	20.92
H	H	A	B	P	29.70	29.29	29.24	24.92
H	H	A	F	A	27.38	27.66	30.40	22.96
H	H	A	F	P	28.50	28.40	26.00	20.86
H	H	A	B	A	27.00	25.72	28.04	24.28
H	H	P	B	A	29.20	31.34	31.53	21.92
H	H	P	F	P	32.48	31.38	30.63	23.92
H	L	A	F	A	27.38	27.92	21.66	22.46
H	L	P	B	A	25.59	27.64	29.32	21.40
H	L	P	F	A	30.28	26.62	26.30	22.52
H	L	A	B	A	19.70	17.15	23.55	21.20

[1] H = high, L = low
P = present, A = absent
F = forward, B = backward

FOOTNOTES

1. Judee K. Burgoon and Thomas Saine, The Unspoken Dialogue: An Introduction to Nonverbal Communication (Boston: Houghton Mifflin Co., 1978).
2. Paul Watzlawick, Janet Beavin, and Don D. Jackson, Pragmatics of Human Communication (New York: W. W. Norton, 1967).
3. Burgoon and Saine, The Unspoken Dialogue; Watzlawick, Beavin, and Jackson, Pragmatics of Human Communication.
4. See, for example, Arthur P. Bochner, Edmund P. Kaminski, and Mary Anne Fitzpatrick, "The Conceptual Domain of Interpersonal Communication: A Factor-Analytic Study," Human Communication Research, 3(1977), 291-302; Timothy Leary. Interpersonal Diagnosis of Personality (New York: Ronald Press, 1957); Maurice Lorr and Douglas M. McNair, "Expansion of the Interpersonal Behavior Cycle," Journal of Personality and Social Psychology, 2(1965), 823-830; Jurgen Reusch and Gregory Bateson, Communication: The Social Matrix of Psychiatry (New York: W. W. Norton & Co., 1951); William Schutz, The Interpersonal Underworld (Palo Alto, Ca.: Science and Behavior Books, 1966); Watzlawick, Beavin, and Jackson, Pragmatics of Human Communication.
5. Judee K. Burgoon and Jerold L. Hale, "Dimensions of Relational Messages," Paper presented at the Speech Communication Association (Anaheim, November, 1981).
6. Burgoon and Hale, "Dimensions of Relational Messages."
7. Burgoon and Hale, "Dimensions of Relational Messages."
8. Judee K. Burgoon, "Nonverbal Communication Research in the 1970's: An Overview," in Communication Yearbook 4, ed. D. Nimmo (New Brunswick, N. J.: Transaction Books, 1980), pp. 179-197.

9. Albert Mehrabian, "Orientation Behaviors and Nonverbal Attitude Communication," Journal of Communication, 16(1967), 324-332; Albert Mehrabian, "Significance of Posture and Position in the Communication of Attitude and Status Relationships," Psychological Bulletin, 71(1969), 359-372; Albert Mehrabian, Silent Messages (Belmont: Ca.: Wadsworth, 1971) (a); Janis F. Andersen, "Teacher Immediacy as a Predictor of Teaching Effectiveness," in Communication Yearbook 3, ed. D. Nimmo (New Brunswick, N.J.: Transaction Books, 1979), pp. 544-583; Janis F. Andersen, Peter A. Andersen, and Arthur D. Jensen, "The Measurement of Immediacy," Journal of Applied Communication Research, 7(1979), 153-180.

10. Albert Mehrabian, Silent Messages.

11. For summaries, see, for example, Janis F. Andersen, "Teacher Immediacy as a Predictor of Teaching Effectiveness," Albert Mehrabian, Silent Messages Michael Argyle and Janet Dean, "Eye Contact, Distance, and Affiliation," Sociometry, 28(1965), 289-304; Miles L. Patterson, "Compensation in Non-Verbal Immediacy Behaviors," Sociometry, 36(1972), 237-252.

12. Argyle and Dean, "Eye Contact, Distance, and Affiliation;" Ira J. Firestone, "Reconciling Verbal and Nonverbal Models of Dyadic Communication," Environmental Psychology and Nonverbal Behavior, 2(1977), 30-43; Eric S. Knowles, "An Affiliative Conflict Theory of Personal and Group Spatial Behavior," in Psychology of Group Influence, ed. P.B. Paulus (Hillsdale, N.J.: Erlbaum, 1980), pp. 133-188; Miles L. Patterson, "An Arousal Model of Interpersonal Intimacy," Psychological Review, 83 (1976), 335-245; Gerald H. Schaeffer and Miles L. Patterson, "Intimacy, Arousal, and Small Group Crowding," Journal of Personality and Social Psychology, 38(1980), 283-290.

13. Larry M. Coutts and Frank W. Schneider, "Affiliative Conflict Theory: An Investigation of the Intimacy Equilibrium and Compensation Hypothesis," Journal of Personality and Social Psychology, 34(1976), 1135-1142; George Keiser and Irwin Altman, "Relationship of Nonverbal Behavior to the Social Penetration Process," Human Communication Research, 2(1976), 147-161; Nancy F. Russo, "Eye Contact, Interpersonal Distance, and the Equilibrium Theory," Journal of Personality and Social Psychology, 31(1975), 497-502; S. Thayer and W. Schiffe, "Observer Judgment of Social Interaction: Eye Contact and Relationship Inferences," Journal of Personality and Social Psychology, 30(1974), 110-114.

14. Albert Mehrabian, "Inference of Attitude from the Posture, Orientation, and Distance of a Communicator," Journal of Consulting and Clinical Clinical Psychology, 32(1968), 296-308; Mehrabian, "Significance of Posture and Position," Exline has also found greater visual interaction among dyads of people with high need for affiliation, but only under non-competitive situations. See Ralph Exline, "Explorations in the Process of Person Perception: Visual Interaction in Relation to Competition, Sex, and Need for Affiliation," Journal of Personality, 31(1962), 177-122.

15. Mehrabian, Silent Messages; Albert Mehrabian, "Verbal and Nonverbal Interaction of Strangers in a Waiting Room," Journal of Experimental Research in Personality, 5(1971), 425-426. Albert Mehrabian and Sheldon Ksionzky, "Categories of Social Behavior," Comparative Group Studies, 3(1972), 425-436.

16. Gordon N. Goldberg, Charles A. Kiesler, and Barry E. Collins, "Visual Behavior and Face-to-Face Distance During Interaction," Sociometry, 32 (1969), 43-53; Chris L. Kleinke, Frederick B. Meeker, and Carl La Fong, "Effects of Gaze, Touch, and Use of Name on Evaluation of Engaged

Couples," Journal of Research in Personality, 7(1974), 368-373; Kenneth V. McDowell, "Accomodations of Verbal and Nonverbal Behaviors as a Function of the Manipulation of Interaction Distance and Eye Contact," Proceedings of the 81st Annual Convention of the American Psychological Association, 8(1973), 207-208.

17. See, for example, Phoebe C. Ellsworth and Ellen J. Langer, "Staring and Approach: An Interpretation of the Stare as a Nonspecific Activator," Journal of Personality and Social Psychology, 33(1976), 117-122; Patterson, "Compensation in Nonverbal Immediacy Behaviors;" Patterson, "An Arousal Model of Interpersonal Intimacy;" Miles L. Patterson, Andre Jordan, Michael B. Hogan, and David Freeker, "Effects of Nonverbal Intimacy on Arousal and Behavioral Adjustment," Journal of Nonverbal Behavior, 5(1981), 184-198.

18. Ralph Exline, David Gray, and Dorothy Schuette, "Visual Behavior in a Dyad as Affected by Interview Content and Sex of Respondent," Journal of Personality and Social Psychology, 1(1965), 201-209.

19. Andersen, "Teacher Immediacy as a Predictor of Teaching Effectiveness;" Andersen, Andersen, and Jensen, "The Measurement of Immediacy;" Mehrabian, Silent Messages; Albert Mehrabian, Nonverbal Communication (Chicago: Aldine-Atherton, Inc., 1972); Patterson, "Compensation in Nonverbal Immediacy Behaviors;" Patterson, "An Arousal Model of Nonverbal Intimacy."

20. Ernst G. Beier and Daniel P. Sternberg, "Subtle Cues Between Newlyweds," Journal of Communication, 17(1977), 92-96.

21. Mehrabian, "Significance of Posture and Position."

22. McDowell, "Accomodations of Verbal and Nonverbal Behaviors;" Albert Mehrabian and Martin Williams, "Nonverbal Concomitants of Perceived and Intended Persuasiveness," Journal of Personality and Social Psychology,

13(1969), 37-58; H. T. Moore and A. R. Gilliand, "The Measurement of Aggressiveness," Journal of Applied Psychology, 5 (1921), 97-118; Stephen Thayer, "The Effect of Interpersonal Looking Duration on Dominance Judgments," Journal of Social Psychology, 79(1969), 285-286.

23. K. T. Strongman and B. G. Champness, "Dominance Heirarchies and Conflict in Eye Contact," Acta Psycholigia, 28(1968), 376-386.

24. For detailed literature reviews, see Miles L. Patterson, "Spatial Factors in Social Interactions," Human Relations, 21(1968), 351-361; Eric Sundstrom and Irwin Altman, "Interpersonal Relationships and Personal Space: Research Review and Theoretical Model," Human Ecology, 4(1976), 47-67.

25. Mehrabian, "Inference of Attitude from the Posture and Position;" Mehrabian and Ksionzky, "Categories of Social Behavior."

26. Mehrabian, Silent Messages; Mehrabian, "Verbal and Nonverbal Interaction of Strangers;" Mehrabian and Ksionzky, "Categories of Social Behavior."

27. Andersen, Andersen, and Jensen, "The Measurement of Immediacy;" Argyle and Dean, "Eye Contact, Distance, and Affiliation;" Mehrabian, "Significance of Posture and Position;" Mehrabian, "Verbal and Nonverbal Interaction of Strangers;" Mehrabian, Nonverbal Communication.

28. Paul Goldring, "The Role of Distance and Posture in the Evaluation of Interaction," The Proceedings of the 75th Annual Convention of the American Psychological Association, (1967).

29. Miles L. Patterson and Lee B. Sechrest, "Interpersonal Distance and Impression Formation," Journal of Personality, 38(1970), 161-166.

30. Patterson, "An Arousal Model of Interpersonal Intimacy."

31. Patterson and Sechrest, "Interpersonal Distance and Impression Formation."

32. Judee K. Burgoon, Don W. Stacks, and Steven A. Burch, "The Role of Nonverbal Violations of Expectations in Interpersonal Influence," Communication, 11(1982), 114-128; Don W. Stacks and Judee K. Burgoon, The Role of Nonverbal Behaviors as Distractors in Resistance to Persuasion in Interpersonal Contexts," Central States Speech Journal, 32(1981), 61-73.

33. Erving Goffman, Relations in Public: Microstudies of the Public Order (New York: Basic Books, 1971); Nancy M. Henley, Body Politics (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1977); M. G. King, "Interpersonal Relations in Preschool Children and Average Approach Distance," Journal of Genetic Psychology, 109(1966), 109-116; Robert Sommer, Personal Space: The Behavioral Basis of Design (Englewood Cliffs, N. J.: Prentice-Hall, 1969).

34. Henley, Body Politics.

35. Stacks and Burgoon, "The Role of Nonverbal Behaviors."

36. Stuart Albert and James M. Dabbs, "Physical Distance and Persuasion," Journal of Personality and Social Psychology, 19(1971), 351-356.

37. Keiser and Altman, "Relationship of Nonverbal Behavior to the Social Penetration Process;" Mehrabian, "Inference of Attitude from the Posture."

38. Goldring, "Role of Distance and Posture in the Evaluation of Interaction;" Mehrabian, "Significance of Posture and Position;" Mehrabian and Ksionzky, "Categories of Social Behavior;" Mehrabian and Williams," Nonverbal Concomitants." An exception appears in a role playing study using four actresses in which forward lean appears as a part of a relaxation complex and backward lean is regarded as more tense. See Keiser and Altman, "Relationship of Nonverbal Behavior to the Social Penetration Process."

39. Goldring, "Role of Distance and Posture in the Evaluation of Interaction."

40. Mehrabian and Williams, "Nonverbal Concomitants."

41. Henley, Body Politics.

42. Coutts and Schneider, "Affiliative Conflict Theory;" Howard M. Rosenfeld, "Instrumental Affiliative Functions of Facial and Gestural Expressions," Journal of Personality and Social Psychology, 4(1966), 65-72.

43. Mehrabian, Nonverbal Communication.

44. Patterson, Jordan, Hogan, and Frerker, "Effects of Nonverbal Intimacy."

45. Patterson, Jordan, Hogan, and Frerker, "Effects of Nonverbal Intimacy."

46. Andersen, "Teacher Immediacy as a Predictor of Teaching Effectivenes;" Andersen, Andersen, and Jensen, "The Measurement of Immediacy;" Argyle and Dean, "Eye Contact, Distance, and Affiliation;" Mehrabian, Silent Messages.

47. Mehrabian and Williams, "Nonverbal Concomitants."

48. Joan M. Romano and Alan S. Bellack, "Social Validation of a Component Model of Assertive Behavior," Journal of Consulting and Clinical Psychology, 48(1980), 478-490.

49. A. Boderman, D. W. Freed, and M. T. Kinnucan, "Tough Me, Like Me: Testing an Encounter Group Assumption," Journal of Applied Behavioral Science, 8(1972), 527-533; G. Breed and J. S. Ricci, "Touch Me, Like Me: An Artifact?," Proceedings of the 81st Annual Convention of the American Psychological Association, 8(1973), 153-154 did not replicate this finding but may have overwhelmed the touch manipulation with a warmth-coldness manipulation they were testing as an alternative explanation for the increased attraction.

50. Kleinke, Meeker, and La Fong, "Effects of Gaze."

51. Henley, Body Politics.

52. Beier and Sternberg, "Subtle Cues Between Newlyweds."

53. Henley, Body Politics.

54. Boderman, Freed, and Kinnucan, "Touch Me, Like Me."

55. Ellsworth and Langer, "Staring and Approach."

56. See, for example, John R. Aiello, "A Test of Equilibrium Theory: Visual Interaction in Relation to Orientation, Distance, and Sex of Interactants," Psychonomic Science, 27(1972), 335-336; John R. Aiello, "A Further Look at Equilibrium Theory: Visual Interaction as a Function of Interpersonal Distance," Environmental Psychology and Nonverbal Behavior, 1(1977), 122-140; Argyle and Dean, "Eye Contact, Distance, and Affiliation;" Coutts and Schneider, "Affiliative Conflict Theory;" Firestone, "Reconciling Verbal and Nonverbal Models;" Knowles, "An Affiliative Conflict Theory;" Patterson, "Compensation in Nonverbal Immediacy Behaviors."

57. Andersen, "Teacher Immediacy as a Predictor of Teaching Effectiveness;" Andersen, Andersen, and Jensen, "The Measurement of Immediacy;" Janis F. Andersen, Peter A. Andersen, and Jon F. Nussbaum, "Three Investigations Exploring Relationships Between Perceived Teacher Communication Behaviors and Student Learning," Communication Education, 30(1981), 377-392; Janis F. Andersen and Julia G. Withrow, "The Impact of Lecturer Nonverbal Expressiveness on Improving Mediated Instruction," Communication Education, 30(1981), 342-353.

58. Romano and Bellack, "Social Validation of a Component Model."

59. Aiello, "A Further Look at Equilibrium Theory;" Mehrabian," Verbal and Nonverbal Interaction of Strangers."

60. For example, Aiello, "A Test of Equilibrium Theory;" Aiello, "A Further Look at Equilibrium Theory;" Exline, Gray, and Schuette, "Visual Behavior in a Dyad;" Firestone, "Reconciling Verbal and Nonverbal Models;" Henley, Body Politics; McDowell." Accomodations of Verbal and Nonverbal Behaviors;" Frank N. Willis, "Initial Speaking Distance as a Function of the Speaker's Relationship," Psychonomic Science, 5(1966), 221-222.

61. Donald K. Fromme and Donna C. Bean, "Dominance and Sex Differences in Nonverbal Responses to Differential Eye Contact," Journal of Research in Personality, 8(1974), 76-87.

62. Mehrabian and Williams, "Nonverbal Concomitants."

62. For example, Burgoon, Stacks, and Burch, "The Role of Nonverbal Violations;" Judee, K. Burgoon, Don W. Stacks, and Gill W. Woodall, "A Communicative Model of Violations of Distancing Expectations," Western Journal of Speech Communication, 43(1979), 153-167; Edward T. Hall, The Silent Langauge (Garden City, N. Y.: Doubleday, 1959).

64. Burgoon and Hale, "Dimensions of Relational Messages." The scale items used were as follows:

Emotionality

1. He/she was frustrated with the other person.
2. He/she expressed anger toward the other person.
3. He/she felt hostile toward the other person.
4. He/she felt very relaxed talking with the other person.
5. He/she tried to make the interaction informal.

Intimacy

1. He/she wanted the other person to trust him/her.
2. He/she expressed attraction toward the other person.
3. He/she made the conversation seem intimate.
4. He/she was interested in talking with the other person.
5. He/she didn't care if the other person liked him/her.

Immediacy

1. He/she was bored by the conversation.
2. He/she was intensely involved in the conversation.
3. He/she was very unemotional.
4. He/she made the conversation seem distant.
5. He/she communicated coldness rather than warmth.

Control

1. He/she wanted to dominate the conversation.
2. He/she tried to win the approval of the otherperson.
3. He/she communicated aggressiveness.
4. He/she was unresponsive to the other person's ideas.
5. He/she attempted to persuade the other person.

65. H. A. Scheffé, The Analysis of Variance (New York: Wiley, 1952).